

TAKATA *et al.*
Application No. 09/722,404

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of the Claims:

Claim 1 (Currently Amended): A semiconductor storage device storing regular data and having a security function for preventing unauthorized use of the regular data, the semiconductor storage device configured for removable connection to a video game system including a video game program executing system and comprising:

a first store including a first storing area for fixedly storing a first portion of the regular data and a dummy data storing area for fixedly storing dummy data in place of a second portion of the regular data, the second portion of the regular data being necessary for use of the regular data;

a second store including a second storing area which has a storage capacity equal to at least a storage capacity of the dummy data storing area of the first store and fixedly stores the second portion of the regular data; and

a read control circuit which is electrically connected to the video game program executing system when the semiconductor storage device is connected to the video game system, the read control circuit comparing compares an input address input thereto from the video game program executing system with a dummy address corresponding to an address space of the dummy data storing area, enabling and which enables reading of the first portion of the regular data from the first store when the input address and the dummy address do not correspond, and disabling ~~disables~~ the reading of the first portion of the regular data and enabling enables the reading of the second portion of the regular data from the second store when the input address and the dummy address correspond.

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Claim 2 (Previously Presented): A semiconductor storage device according to claim 1, wherein the first store includes a masked ROM, and the second store includes a nonvolatile semiconductor memory which is a writable/readable memory.

Claim 3 (Previously Presented): A semiconductor storage device according to claim 2, wherein the nonvolatile semiconductor memory has a storage capacity larger than the storage capacity of the second regular data storing area, and further includes a dummy address storing area, other than the second storing area, for storing the dummy address, and the dummy address supplied to the read control circuit is read from the dummy address storing area.

Claim 4 (Previously Presented): A semiconductor storage device according to claim 3, wherein the nonvolatile semiconductor memory is constructed such that data is written with a first write voltage in the second regular data storing area and the dummy address storing area, and data is written with a second write voltage lower than the first write voltage in other areas.

Claim 5 (Previously Presented): A semiconductor storage device according to claim 1, wherein the read control circuit includes a comparator for comparing the input address and the dummy address with each other to output a first signal or a second signal, an enabling/disabling circuit for enabling the first store in response to the first signal and disabling the first store in response to the second signal, and a read address output circuit for outputting a read address for the second portion of the regular data stored in the second store in response to the second signal.

Claim 6 (Previously Presented): A semiconductor storage device according to claim 2, wherein the nonvolatile semiconductor memory and the read control circuit are formed within the same single memory chip.

Claim 7 (Currently Amended): A memory device storing an application program and having a security function for preventing unauthorized use of the application program, the memory device configured for removable connection to a video game system including a video game program executing system and comprising:

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a first store including a first program storing area for fixedly storing a first portion of the application program and a dummy data storing area for fixedly storing dummy data in place of a second portion of the application program, the second portion of the application program being necessary for use of the application;

a second store including a second program storing area which has a storage capacity equal to at least a storage capacity of the dummy data storing area of the first store and fixedly stores the second portion of the application program; and

a read control circuit which is electrically connected to the video game program executing system when the memory device is connected to the video game system, the read control circuit comparing compares an input address input thereto from the video game program executing system with a dummy address corresponding to an address space of the dummy data storing area, enabling and which enables reading of the first portion of the application program from the first store when the input address and the dummy address do not correspond, and disabling disables the reading of the first portion of the application program and enabling enables the reading of the second portion of the application program from the second store when the input address and the dummy address correspond.

Claim 8 (Currently Amended): An electronic device for storing an application program and having a security function for preventing unauthorized use of the application program, the electronic device configured for removable connection to a video game system including a video game program executing system and comprising:

a first store including a first program storing area for fixedly storing a first portion of the application program and a dummy data storing area for fixedly storing dummy data in place of a second portion of the application program, the second portion of the application program being necessary for use of the application program;

a second store including a second program storing area which has a storage capacity equal to at least a storage capacity of the dummy data storing area of the first store and fixedly stores the second portion of the application program; and

a read control circuit which is electrically connected to the video game program executing system when the electronic device is connected to the video game system, the read control circuit

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~~comparing~~ compares an input address ~~input thereto from the video game program executing system~~ with a dummy address corresponding to an address space of the dummy data storing area, ~~enabling and which enables~~ reading of the first portion of the application program from the first store when the input address and the dummy address do not correspond, and ~~disabling~~ disables the reading of the first portion of the application program and ~~enabling~~ enables the reading of the second portion of the application program from the second store when the input address and the dummy address correspond.

Claim 9 (Currently Amended): A memory device ~~for a game machine~~ storing a game program and having a security function for preventing unauthorized use of the game program, ~~the memory device configured for removable connection to a game machine including a video game program executing system and~~ comprising:

a first store including a first program storing area for fixedly storing a first portion of the game program and a dummy data storing area for fixedly storing dummy data in place of a second portion of the game program, the second portion of the game portion being necessary for use of the game program;

a second store including a second program storing area which has a storage capacity equal to at least a storage capacity of the dummy data storing area of the first storing means and fixedly stores the second portion of the game program; and

a read control circuit which ~~is electrically connected to the video game program executing system when the memory device is connected to the video game system, the read control circuit~~ ~~comparing~~ compares an input address ~~input thereto from the video game program executing system~~ with a dummy address corresponding to an address space of the dummy data storing area, ~~enabling and which enables~~ reading of the first portion of the game program from the first store when the input address and the dummy address do not correspond, and ~~disabling~~ disables the reading of the first portion of the game program and ~~enabling~~ enables the reading of the second portion of the game program from the second store when the input address and the dummy address correspond.

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Claim 10 (Previously Presented): A memory device according to claim 9, wherein the first store includes a masked ROM, and the second store includes a nonvolatile semiconductor memory which is a writable/readable memory.

Claim 11 (Previously Presented): A memory device according to claim 10, wherein the nonvolatile semiconductor memory has a storage capacity larger than the storage capacity of the second storing area, and further includes a dummy address storing area, other than the second regular data storing area, for storing the dummy address, and the dummy address supplied to the read control circuit is read from the dummy address storing area.

Claim 12 (Previously Presented): A memory device according to claim 11, wherein the nonvolatile semiconductor memory is constructed such that the data is written in the second game program storing area and the dummy address storing area with a first write voltage and data is written with a second write voltage lower than the first write voltage into other areas, and in the storing area into which the data is written with the second write voltage,
backup data representing a development of the game obtained by executing the game program by a processor of the game machine is written.

Claim 13 (Previously Presented): A memory device according to claim 9, wherein the read control circuit includes a comparator for comparing the input address and the dummy address with each other to output a first signal or a second signal, an enabling/disabling circuit for enabling the first store in response to the first signal and disabling the first store in response to the second signal, and a read address output circuit for outputting a read address for the second portion of the game program stored in the second store in response to the second signal.

Claim 14 (Currently Amended): A method for preventing unauthorized use of regular data stored in a storage device configured for removable connection to a video game system including a video game program executing system, the method comprising:
storing in a first storage area of the storage device a first portion of the regular data and storing dummy data in a dummy data area of said first storage area in place of a second portion

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of the regular data, the second portion of the regular data being necessary for use of the regular data;

storing in a second storage area of the storage device having a storage capacity equal to at least a storage capacity of the dummy data storing area of the first storage area the second portion of the regular data; and

comparing an input address from the video game program executing system with a dummy address corresponding to an address space of the dummy data storing area and enabling reading of the first portion of the regular data from the first storage area when the input address and the dummy address do not correspond, and disabling the reading of the first portion of the regular data and enabling the reading of the second portion of the regular data from the second storage area when the input address and the dummy address correspond.

Claim 15 (Previously Presented): A method according to claim 14, wherein the first storage area resides in a masked ROM, and the second storage area resides in a nonvolatile semiconductor memory which is a writable/readable memory.

Claim 16 (Previously Presented): A method according to claim 15, wherein the nonvolatile semiconductor memory has a storage capacity larger than a storage capacity of the second storing area, and the method further includes storing a dummy address in a dummy address storing area, and reading the dummy address from the dummy address storing area.

Claim 17 (Previously Presented): A method according to claim 15, further including writing to the nonvolatile semiconductor memory with a first write voltage in certain areas thereof, and writing with a second write voltage lower than the first write voltage in other areas thereof.

Claim 18 (Previously Presented): A method according to claim 15, further including comparing the input address and the dummy address with each other to output a first signal or a second signal, and enabling the first storage area in response to the first signal and disabling the first storage area in response to the second signal, and outputting a read address for the second

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portion of the regular data being stored in the second storage area in response to the second signal.

Claim 19 (Currently Amended): A storage device configured for removable connection to a video game system including a video game program executing system, the storage device adapted to provide security for a video game program stored therein and[[,]] comprising:

a video game program memory for storing a first part of the video game program, and for storing dummy data at one or more predetermined locations thereof;

a memory separate from the video game program memory for storing a second part of the video game program, the second part of the video game program being a part that is predetermined to be necessary for use of the video game program so that copying of the first part of the video game program and the dummy data from the video game memory will not provide an operable video game program;

memory control circuitry which is electrically connected to the video game program executing system when the storage device is connected to the video game system, the memory control circuitry for controlling the video game program memory and the separate memory, wherein the memory control circuitry compares an address input thereto from the [[a]] video game program executing system with an address indicative of the one or more predetermined locations of the video game program memory for the separate memory, enables output from the video game program memory if the input address and the address indicative of the one or more predetermined locations for the separate memory do not correspond, and disables output from the video game program memory and enables output from the separate memory if the input address and the address indicative of the one or more predetermined locations for the separate memory correspond.

Claim 20 (Previously Presented): The storage device according to claim 19, wherein the memory control circuitry comprises an output disabling circuit for disabling the output of the video game program memory if the input address and the address for the separate memory correspond.

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Claim 21 (Previously Presented): The storage device according to claim 20, wherein the output disabling circuit comprises a logic circuit.

Claim 22 (Previously Presented): The storage device according to claim 19, wherein the video game program memory and the separate memory are embodied on different chips.

Claim 23 (Previously Presented): The storage device according to claim 19, wherein the video game program memory is disabled in response to a chip select signal if the input address and the address for the separate memory correspond.

Claim 24 (Previously Presented): The storage device according to claim 19, wherein the separate memory comprises a first portion in which data is written using a first writing voltage and a second portion in which data is written using a second, different writing voltage.

Claim 25 (Previously Presented): The storage device according to claim 24, wherein the first voltage is higher than the second voltage and the second part of the video game program is stored in the first portion of the separate memory.

Claim 26 (Previously Presented): The storage device according to claim 25, wherein the first voltage is a voltage different than a writing voltage of video game program executing system so that the video game program executing system cannot write to the first portion of the separate memory.

Claim 27 (Previously Presented): The method according to claim 25, wherein the second voltage is a voltage equal to a writing voltage of the video game program executing system and the video game program executing system selectively writes game back-up data to the second portion of the separate memory using the second voltage.

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Claim 28 (Previously Presented): A method for providing security for a video game program stored in a storage device configured for removable connection to a video game system including a video game program executing system, the method comprising:

storing a first part of the video game program in a video game program memory of the storage device;

storing dummy data at one or more predetermined locations of the video game program memory;

storing a second part of the video game program in a memory of the storage device separate from the video game program memory, the second part of the video game program being predetermined to be a part necessary for use of the video game program so that copying of the first part of the video game program and the dummy data from the video game program memory will not provide an operable video game program, wherein

an address input to the storage device from the [[a]] video game program executing system is compared with an address indicative of the one or more predetermined locations of the video game program for the separate memory;

access to the video game program memory is enabled if the input address and the address indicative of the one or more predetermined locations for the separate memory do not correspond; and

access to the video game program memory is disabled and access to the separate memory is enabled if the input address and the address indicative of the one or more predetermined locations for the separate memory correspond.

Claim 29 (Previously Presented): The method according to claim 28, wherein the separate memory comprises a first portion in which data is written using a first writing voltage and a second portion in which data is written using a second, different writing voltage

Claim 30 (Previously Presented): The method according to claim 29, wherein the first voltage is higher than the second voltage and the second part of the video game program is stored in the first portion of the separate memory.

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Claim 31 (Previously Presented): The method according to claim 30, wherein the first voltage is a voltage different than a writing voltage of the video game program executing system so that the video game program executing system cannot write to the first portion of the separate memory.

Claim 32 (Previously Presented): The method according to claim 30, wherein the second voltage is a voltage equal to a writing voltage of the video game program executing system and the video game program executing system selectively writes game back-up data to the second portion of the separate memory using the second voltage.